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7590

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EXAMINER

STRECKER, GERARD R

ART UNIT

PAPER NUMBER

2862

DATE MAILED: 07/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/813,767

Applicant(s)

MURPHY

Examiner

G. R. STRECKER

Group Art Unit

2862

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-25 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-25 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
 - ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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The disclosure is objected to because of the following informalities: at page 3, line 13, "aperature" should be ---aperture---. See also claim 12, lines 2 and 3, claim 18, lines 2 and 3, and claim 24, lines 2 and 3. At page 8, line 10, "place" should be ---placed---. At page 9, line 23, "44" should apparently be ---46---.

Appropriate correction is required.

Claims 1-24 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. With respect to claims 1, 19 and 22, it is not clear from the specification how the term "string" shown as 10 in Fig. 1, is defined and what its dimensions are, including the single mode optical fiber 26 and gold thin film 28 shown in Fig. 4. With respect to claims 6 and 10, it is not clear from the description of the embodiment of Fig. 3, beginning at page 4, line 31, how the plural strings or fibers constitute the means for varying the tension. Nor is it clear from Fig. 3, what the structural, multi-dimensional form of the substrate is, and how the strings are "placed" thereon. With respect to claim 7, it is not clear where a plural magnetometer array having magnetometers which are joined end to end with the portion of the string or fiber connecting two magnetometers not in tension, is shown or described.

Claims 3-18 and 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 3, it is not clear how the light source structurally cooperates with the string. In claim 4/1, it is not clear what constitutes the "fiber". In claim 11, it is not clear what the motion of the fiber represents and how it is related to deflection of the string. In claim 22, at line 4, it is not clear what constitutes "the string". In claim 25, at line 2, it is not clear what structure is defined by the mechanical resonator such that it is capable of receiving current.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 11, 19, 20 22 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Arunkumar.

Arunkumar discloses (Fig. 1) a magnetometer comprising: an electrically conducting "string" in the form of a light conducting fiber 24 with an electrically conducting coating 26, the string receiving a current (col. 3, lines 31-34). The magnetometer is placed in a magnetic field to be detected, the magnetic field being perpendicular to the direction of the current, producing a

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force to deflect the string which can be detected. See col. 4. Although not shown, the string would necessarily be supported in tension at spaced locations so that deflection may occur. Note col. 4, lines 29-31. Deflection of the string is detected optically.

Claims 4, 5, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arunkumar.

Although Arunkumar does not show means for varying the tension of the string, it would have been obvious to include a string tension varying means with Arunkumar's magnetometer, as a necessary adjunct, for creating and maintaining a desired tension, to obtain optimum operation of the magnetometer. Piezo elements are conventionally employed for varying tension of strings in stringed devices.

Givens et al and Okamura (Japan) are made of record to show Lorentz force magnetometers.

Tran et al and Yao et al are made of record to show sensors with current carrying deflectable elements.

Kurtz and Tomioka are made of record to show piezo-element tension varying devices.

Any inquiry concerning this communication should be directed to G. R. Strecker at telephone number (703) 308-4937.

G.R. Strecker/mm

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07/08/02

Gerard R. Strecker
GERARD R. STRECKER
PRIMARY EXAMINER